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A SELF-CONTAINED DEUTERIUM-TRITIUM SOURCE FOR CRYOGENIC ICF TARGET DEVELOPMENT*

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The characteristics of cryogenic ICF capsules containing deuterium-tritium (DT) are greatly influenced by the heat generated by the decay the tritium. Consequently, it is essential to perform experiments with DT in order to accurately measure characteristics of these capsules. In order to facilitate these measurements we are developing a self-contained DT source to supply gas for these experiments.

The risk of release of DT gas comes primarily through leaks from system components at pressures above atmospheric pressure and from vacuum pump effluent. Our system minimizes these risks by operation below atmospheric pressure at all times, and by the inclusion of a cryogenic sorption pump which produces no effluent. We describe the operation and performance of this system.

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